

AMENDMENTS TO THE CLAIMS

The following listing of claims will replace all prior versions and listings of claims in the application.

LISTING OF CLAIMS

1. (Currently Amended) A server system for distributing an electromotive power assisted bicycle that enables, via a communication network, an on-line shopping or a rental service of an electromotive power assisted bicycle comprising a primary bicycle unit having a traveling function basically provided by a pedal effort, which is assembled with components of an electromotive power assisting kit, in which

said electromotive power assisting kit comprises at least:

a pedal effort detection means adapted to detect the pedal effort;

a drive unit adapted to output an electromotive power based on the detected pedal effort in accordance with a control program;

a force-combining means for combining the output electromotive power with the pedal effort; and

a battery for said drive unit;

wherein a plurality of options are made available for at least one component of said electromotive power assisting kit;

said server system for distributing an electromotive power assisted bicycle characterized in comprising:

a control means;

a communication means connectable to a user terminal via the communication network;

a first searching means for searching bicycle information defining said primary bicycle unit; and

a second searching means for searching electromotive power assisting information defining said electromotive power assisting kit, wherein said control means includes:

a first display function for indicating at least a part of said bicycle information in said user terminal;

a second display function for indicating at least a part of said electromotive power assisting information in said user terminal under a condition where some components of the electromotive power assisting kit having a plurality of options that have been made available for a user to choose; and

a designing function for creating design information so that, when either any one of said components of said electromotive power assisting kit having a plurality of options is selected and determined in said user terminal, said electromotive power assisting kit containing said component of selected aspect can be assembled with said primary bicycle unit.

2. (Original) A server system for distributing an electromotive power assisted bicycle in accordance with claim 1, in which

said primary bicycle unit includes an one-way clutch means for connecting a drive shaft with a sprocket such that a rotating torque of said drive shaft substantially only in one direction is selectively transmitted to said sprocket, and

said pedal effort detection means detects a physical quantity that varies in response to a deformation of the one-way clutch means caused by the pedal effort.

3. (Original) A server system for distributing an electromotive power assisted bicycle in accordance with claim 2, in which said one-way clutch means includes:

two pedal effort transmission parts disposed adjacently to each other along the axial direction of said drive shaft, which are engagingly locked to each other during a rotation in said only one direction so as to extend a space between said two parts; and

an elastic member disposed so as to resist against the extension in the space between said two pedal effort transmission parts, wherein

said pedal effort detection means includes a strain sensor for detecting a strain in said elastic means.

4. (Currently Amended) A server system for distributing an electromotive power

assisted bicycle in accordance with ~~any one of~~ claims 1 through 3, in which
a plurality of types of unit is made available for said primary bicycle unit,
wherein

 said first display function indicates said bicycle information in said user
terminal under a condition where a plurality of types of primary bicycle unit is made
available for a user to choose; and

 said designing function, when either any one of the types of the primary
bicycle unit is selected in said user terminal, creates design information to allow the
components of the electromotive power assisting kit to be assembled with the
selected type of primary bicycle unit.

5. (Currently Amended) A server system for distributing an electromotive power
assisted bicycle in accordance with ~~any one of~~ claims 1 through 4, further
comprising:

 a third searching means for searching information about suppliers and
assemblers concerning said primary bicycle unit, said electromotive power assisting
kit and assembling thereof respectively; and

 a user information acquisition means for acquiring user information from said
user terminal;

 wherein said server system:
 issues orders for said primary bicycle unit and said electromotive power
 assisting kit, which have been selected by the user, to respective corresponding
 suppliers via the communication network;

 sends information about the assembler to the respective suppliers via the
 communication network; and

 sends said design information and the acquired user information to said
 assembler.

6. (Currently Amended) A server system for distributing an electromotive power
assisted bicycle in accordance with ~~any one of~~ claims 1 through 5, in which
 said bicycle information includes at least an image date data on the primary

bicycle unit and a data on dimension and position of each frame, and said first display function indicates said image data or a compressed image of said primary bicycle unit in said user terminal; and

said electromotive power assisting information includes at least an image data on said electromotive power assisting kit and a data on geometry and dimension of said electromotive power assisting kit, and said second display function indicates said image data or a compressed image of said electromotive power assisting kit in said user terminal.

7.. (Currently Amended) A server system for distributing an electromotive power assisted bicycle in accordance with ~~any one of~~ claims 1 through 6, in which a plurality of options prepared for at least one component of said electromotive power assisting kit relate to at least either one of a type and a position of installation of said component of said electromotive power assisting kit.

8. (Original) A server system for distributing an electromotive power assisted bicycle in accordance with claim 7, in which said second display function provides an image display of said types of said components of said electromotive power assisting kit.

9. (Original) A server system for distributing an electromotive power assisted bicycle in accordance with claim 8, in which said second display function provides an image of a certain type of electromotive power assisting kit, which has been selected in said user terminal, superimposed on the image of the primary bicycle unit in a state where said selected kit is virtually assembled with said primary bicycle unit, so as to be displayed on the user terminal.

10. (Currently Amended) A server system for distributing an electromotive power assisted bicycle in accordance with ~~any one of~~ claims 7 through 9 8, in which said user terminal is equipped with a mouse, wherein

said second display function makes a position of installation of said component of said electromotive power assisting kit in said image display selectable by moving the specific component selected by a mouse click in accordance with a

mouse drag so as to be displayed in a desired position.

11. (Currently Amended) A server system for distributing an electromotive power assisted bicycle in accordance with ~~any one of~~ claims 1 through 10, in which said designing function issues said design information after a notice that either any one of the options of said components of the electromotive power assisting kit having a plurality of options having been determined in said user terminal.

12. (Currently Amended) A server system for distributing an electromotive power assisted bicycle in accordance with ~~any one of~~ claims 1 through 11, in which said designing function of said control means further comprises:

a determining function for determining whether it is possible for said component of said electromotive power assisting kit selected in said user terminal to be assembled with said primary bicycle unit based on said bicycle information and said electromotive power assisting information; and

a notifying function for notifying the user terminal of a determination that it is impossible for the selected component of the electromotive power assisting kit to be assembled with the primary bicycle unit when said determining function has determined so.

13. (Currently Amended) A server system for distributing an electromotive power assisted bicycle in accordance with ~~any one of~~ claims 1 through 12, in which said designing function of said control means is adapted such that, if said component of said electromotive power assisting kit selected in said user terminal needs other components of the electromotive power assisting kit that have not been selected, said designing function creates design information to issue an instruction that those required other components of said electromotive power assisting kit should be additionally assembled together with said selected component.

14. (Currently Amended) A server system for distributing an electromotive power assisted bicycle in accordance with ~~any one of~~ claims 1 through 13, in which a plurality of options of the drive units are prepared, wherein each of the options includes at least a different control program from each other.

15. (Currently Amended) A server system for distributing an electromotive power assisted bicycle in accordance with claim 14, in which as ~~has a set of plural~~ different control programs, including at least ~~either~~ one of the following programs; ~~is prepared,~~ ~~including:~~

a plurality of electromotive power assisting control programs for inducing a variation in an assist ratio relative to a bicycle speed in each different manner;

an aerobic exercise control program enabling aerobic exercise;

a muscle exercise control program enabling muscle exercise; and

a control program allowing for traveling exclusively with an electromotive power.

16. (Original) A server system for distributing an electromotive power assisted bicycle in accordance with claim 15, in which said drive unit controlled by said aerobic exercise control program or said muscle exercise control program selects either one of an electromotive power or a loading force based on at least said pedal effort detected by said pedal effort detection means so as to achieve a pedal effort level enabling aerobic exercise or muscle exercise and allows for said either one of the electromotive power or the loading force to be added to said pedal effort via said force-combining means.

17. (Original) A server system for distributing an electromotive power assisted bicycle in accordance with claim 16, in which said drive unit comprises:

an electric motor; and

an electromagnetic clutch interposed between said electric motor and said force-combining means, wherein

said loading force is applied as a rotational resistance of said electric motor, which is produced by connecting said electric motor with said force-combining means through said electromagnetic clutch under a condition where said electric motor is not energized.

18. (Original) A server system for distributing an electromotive power assisted bicycle in accordance with claim 17, in which there is a mode made selectable for

said battery, where said battery is charged by an electromotive force to be produced when said electric motor is rotated by a pedal effort against said loading force under a condition where the electric motor is not energized.

19. (Currently Amended) A server system for distributing an electromotive power assisted bicycle in accordance with ~~any one of~~ claims 1 through 18, in which as one of the components of said electromotive power assisting kit, a human body parameter measuring means is prepared, wherein

said drive unit sets a pedal effort level based on at least a human body parameter measured by said human body parameter measuring means and executes a control such that the detected pedal effort represents said pedal effort level.

20. (Original) A server system for distributing an electromotive power assisted bicycle in accordance with claim 19, in which a set of plural types of parameters is prepared as said human body parameter, wherein

said second display function of said control means indicates one or more of said plural types of human parameters to be selectable in said user terminal; and

said designing function creates design information for assembling at least a human body parameter measuring means for measuring said selected human body parameter and a drive unit capable of executing a control based on the selected human body parameter with said primary bicycle unit.

21. (Currently Amended) A server system for distributing an electromotive power assisted bicycle in accordance with claim 19 or 20, in which said human body parameter includes at least ~~either~~ one of a heart rate and a blood pressure.

22. (Currently Amended) A server system for distributing an electromotive power assisted bicycle in accordance with ~~any one of~~ claims 1 through 21, further comprising:

a physical strength/health information acquisition means for acquiring physical strength/health information of a user via the communication network;

a program selecting means for selecting a control program or a parameter for

said control program, which is most suitable for said user, based on the acquired physical strength/health information; and

a program transmission means for transmitting said control program or said parameter for said control program, which has been selected by said program selecting means, to a user terminal via the communication network.

23. (Original) A server system for distributing an electromotive power assisted bicycle in accordance with claim 22, in which said user terminal is prepared as a component of said electromotive power assisting kit, wherein said control program or said parameter for said control program that has been received can be downloaded to said drive unit of said electromotive power assisted bicycle of said user.

24. (Currently Amended) A server system for distributing an electromotive power assisted bicycle in accordance with claim 23, in which said user terminal and said human body parameter measuring means are prepared as components of said electromotive power assisting kit, wherein

said user terminal acquires said human body parameter measured by said human body parameter measuring means as being said physical strength/health information of said user.

25. (Currently Amended) A server system for distributing an electromotive power assisted bicycle in accordance with ~~any one of claims 1 through 24~~, further comprising:

a physical strength/health information acquisition means for acquiring physical strength/health information of a user via the communication network; and

a program selecting means for selecting a control program or a parameter of said control program, which is most suitable for said user, based on the acquired physical strength/health information, wherein

said designing function of said control means creates a command to download said selected control program or said parameter of said control program to said drive unit.

26. (Currently Amended) A server system for distributing an electromotive power

assisted bicycle in accordance with ~~any one of~~ claims 1 through 25, in which said control means further comprises ~~such~~ an ID entry function that, if any components of said electromotive power assisting kit that require authorization are selected in the user terminal, displays an entry screen for prompting the user to enter information representing an ID for the authorization in said user terminal, wherein said designing information is issued only when the entered ID is verified.

27. (Currently Amended) A server system for distributing an electromotive power assisted bicycle in accordance with ~~any one of~~ claim 1 ~~through~~ 26, in which said drive unit is mounted to said primary bicycle unit via a unit mounting bracket.

28. (Original) A server system for distributing an electromotive power assisted bicycle in accordance with claim 27, in which said primary bicycle unit includes a drive shaft that is rotated by a pedal effort and a support section for supporting said drive shaft with a bearing; and

said unit mounting bracket has a pair of side plates and a bottom plate connecting to said pair of side plates, wherein

said unit mounting bracket is secured to said support section with said drive shaft passing through said pair of side plate and with said supporting section clamped between said pair of side plates, and said drive unit is mounted on said bottom plate and thereby said drive unit is securely mounted to a bicycle body.

29. (Original) A server system for distributing an electromotive power assisted bicycle in accordance with claim 28, in which said designing function of said control means creates the design information for instructing a mounting aspect and a position of said unit mounting bracket based on the selected options of said drive unit and said primary bicycle unit.

30. (Currently Amended) A server system for distributing an electromotive power assisted bicycle in accordance with ~~any one of~~ claims 1 ~~through~~ 26, in which said primary bicycle unit has a primary sprocket that is rotatable for transmitting a pedal effort to a driving wheel, and

said force-combining means includes:

a secondary sprocket that is rotatable coaxially with said primary sprocket;
a power sprocket to be rotated by said drive unit; and
an auxiliary chain stretched across between said secondary sprocket and said power sprocket.

31. (Original) A server system for distributing an electromotive power assisted bicycle in accordance with claim 30, in which

said second display function provides an indication in which said auxiliary chain are stretched over the power sprocket of said drive unit located in the position defined by the installation condition of said drive unit.

32. (Currently Amended) A server system for distributing an electromotive power assisted bicycle in accordance with claim 30 or ~~31~~, in which said designing function of said control means determines a length of said auxiliary chain based on the selected options of said drive unit and said primary bicycle unit and creates the designing information to be issued.

33. (Currently Amended) A server system for distributing an electromotive power assisted bicycle in accordance with ~~any one of~~ claims 1 through ~~32~~, in which said battery is mounted to a frame of said primary bicycle unit via a battery bracket, said battery bracket comprising:

a bracket member capable of detachably accommodating the battery and engagingly locking the accommodated battery by a key; and
a bracket retainer to be coupled with said bracket member so as to clamp the body frame.

34. (Currently Amended) A server system for distributing an electromotive power assisted bicycle in accordance with ~~any one of~~ claims 1 through ~~33~~, in which

when said position of said battery is selected in said user terminal, said designing function of said control means creates design information for giving an instruction on the frame and the position in the frame for said battery bracket to be installed.

35. (Currently Amended) A server system for distributing an electromotive power assisted bicycle in accordance with ~~any one of~~ claims 1 through 34, in which a bicycle speed sensor for detecting a bicycle speed is ~~further prepared~~ included as a component of said electromotive power assisting kit, said sensor comprising:

a ring magnet having a generally flat surface on which a plurality of magnet segments are formed so as to induce a magnetic field that varies spatially at a constant angular interval along a circumferential direction over said surface, said ring magnet capable of being installed so as to rotate coaxially with ~~said a section~~ subject to be detected;

a magnetic field detection means for detecting a magnetic field in a fixed location adjacent to a surface of said ring magnet; and

a signal processing means for detecting a rotational speed of said section subject to the detection or a physical quantity relating thereto based on a magnetic field signal detected by said magnetic field detection means.

36. (Original) A server system for distributing an electromotive power assisted bicycle in accordance with claim 35, in which said section subject to the detection represents a rotational part within said drive unit.

37. (Currently Amended) A server system for distributing an electromotive power assisted bicycle in accordance with ~~any one of~~ claims 1 through 36, in which a control switch for operationally providing an ON-OFF command on an operation of said drive unit is ~~further prepared~~ included as a component of said electromotive power assisting kit, wherein

said control switch is initially in a neutral mode, defining neither of an ON-mode nor an OFF-mode, and adapted to return to the neutral mode position after the shifting operation either to the ON-mode position or to the OFF-mode position.

38. (Currently Amended) A server system for distributing an electromotive power assisted bicycle in accordance with ~~any one of~~ claims 1 through 37, in which a cover housing for covering an area defined by components of said frame of said primary

bicycle unit is ~~further prepared~~ included as a component of said electromotive power assisting kit, wherein

said second display function further provides an indication in which the area to be covered by said cover housing can be designated in the user terminal, and

said designing function further creates design information for assembling the cover housing suitable for covering said area designated in said user terminal with said primary bicycle unit.

39. (Original) A server system for distributing an electromotive power assisted bicycle in accordance with claim 38, in which said designing function designs a geometry and dimension of said cover housing suitable for covering the enclosed area designated in said user terminal based on at least said frame of said primary bicycle unit and a physical relationship relative to other components of said electromotive power assisting kit.

40. (Currently Amended) A server system for distributing an electromotive power assisted bicycle in accordance with claim 38 or 39, in which said second display function of said control means provides an indication in which at least one of a color, a transparency and a type of decoration of said cover housing can be selected by a user.

41. (Currently Amended) A server system for distributing an electromotive power assisted bicycle in accordance with ~~any one of~~ claims 1 through 40, in which said communication network represents any one of the Internet, an intranet or a local area network.

42. (Currently Amended) A server system for distributing an electromotive power assisted bicycle in accordance with ~~any one of~~ claims 1 through 41, in which said user terminal represents any one of a personal computer, a cellular phone or a PHS.

43. (Currently Amended) A server system for distributing an electromotive power assisted bicycle that enables via a communication network an on-line shopping or a rental service of an electromotive power assisted bicycle comprising a primary bicycle unit having a traveling function basically provided by a pedal effort, which is

assembled with components of an electromotive power assisting kit, in which a plurality of types of said primary bicycle unit is prepared, and said electromotive power assisting kit comprises at least:

- a pedal effort detection means adapted to detect the pedal effort;
- a drive unit adapted to output an electromotive power based on the detected pedal effort in accordance with a control program;
- a force-combining means for combining the output electromotive power with the pedal effort; and
- a battery for said drive unit;

said server system for distributing an electromotive power assisted bicycle characterized in comprising:

- a control means;
- a communication means connectable to a user terminal via the communication network;
- a first searching means for searching bicycle information defining said primary bicycle unit; and
- a second searching means for searching electromotive power assisting information defining said electromotive power assisting kit, wherein said control means includes:

 - a first display function for indicating at least a part of said bicycle information in said user terminal under a condition where a plural types of primary bicycle unit have been made available for a user to choose;
 - a second display function for indicating at least a part of said electromotive power assisting information in said user terminal; and
 - a designing function for creating design information such that, when either any one of said plural types of primary bicycle unit is selected in said user terminal, respective components of said electromotive power assisting kit can be assembled with said selected type of said primary bicycle unit.